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**west virginia** department of environmental protection

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Office of Oil and Gas  
601 57th Street SE  
Charleston, WV 25304  
(304) 926-0450  
(304) 926-0452 fax

Earl Ray Tomblin, Governor  
Randy C. Huffman, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

December 06, 2013

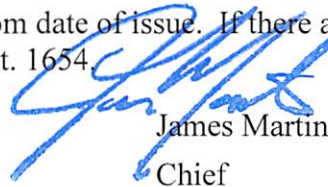
**WELL WORK PLUGGING PERMIT**

**Plugging**

This permit, API Well Number: 47-2101559, issued to EQT PRODUCTION COMPANY, is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to all conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas inspector.

Upon completion of the plugging well work, the above named operator will reclaim the site according to the provisions of WV Code 22-6-30. The above named operator will also file, as required in WV Code 22-6-23, an affidavit on form WR-38 by two experienced persons in the operator's employment and the Oil and Gas inspector that the work authorized under this permit was performed and a description given. Failure to abide by all statutory and regulatory provisions governing all duties and operations here under may result in suspensions or revocation of this permit and in addition may result in civil and/or criminal penalties being imposed upon the operator.

This permit will expire in two (2) years from date of issue. If there are any questions, please free to contact me at (304) 926-0499 ext. 1654.



James Martin  
Chief

Operator's Well No: 154941 (C. JACKSON #1)  
Farm Name: LOWTHER, AVIN B. & MARY E.  
**API Well Number: 47-2101559**  
**Permit Type: Plugging**  
Date Issued: 12/06/2013

**Promoting a healthy environment.**

## PERMIT CONDITIONS

West Virginia Code § 22-6-11 allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

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### CONDITIONS

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1. All pits must be lined with a minimum of 20 mil thickness synthetic liner.
2. In the event of an accident or explosion causing loss of life or serious personal injury in or about the well or while working on the well, the well operator or its contractor shall give notice, stating the particulars of the accident or explosion, to the oil and gas inspector and the Chief within twenty-four (24) hours.
3. Well work activities shall not constitute a hazard to the safety of persons.

CK 16904  
10000  
Date: November 22, 2013  
Operator's Well  
Well No. 154941 (C. Jackson #1)  
API Well No.: 47 021 - 01559

2101559P

STATE OF WEST VIRGINIA  
DIVISION OF ENVIRONMENTAL PROTECTION  
OFFICE OF OIL AND GAS

APPLICATION FOR A PERMIT TO PLUG AND ABANDON

- 4) Well Type: Oil \_\_\_\_\_ Gas X Liquid Injection \_\_\_\_\_ Waste Disposal:  
If Gas, Production X Or Underground storage \_\_\_\_\_ Deep \_\_\_\_\_ Shallow X
- 5) Elevation: 1158' Watershed: Jakes Run  
Location: Glenville 03 County: Gilmer 21 Quadrangle: Gilmer 7.5' 365  
District: \_\_\_\_\_
- 6) EQT Production Company  
Well Operator 120 Professional Place  
Address: Bridgeport, WV 26330
- 7) Designated Agent: Rex C. Ray  
Address: 120 Professional Place  
Bridgeport, WV 26330
- 8) Oil & Gas Bryan Harris  
Name: P.O. Box 157  
Address: Volga, WV 26238
- 9) Plugging Contractor:  
Name: HydroCarbon Well Service  
Address: PO BOX 995  
Buckhannon, WV 26201

- 10) Work Order: The work order for the manner of plugging this well is as follows:

See Attachment for details and procedures.

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Office of Oil and Gas

DEC 05 2013

WV Department of  
Environmental Protection

OFFICE USE ONLY

Notification must be given to the district oil and gas inspector 24 hours before permitted work can commence.

Work order approved by inspector

Bryan Harris

Date 12-4-13

## PLUGGING PROGNOSIS - Weston

**Jackson C. #1 (154941)**

GILMER, COUNTY, WEST VIRGINIA

API # 47-021-01559

Burnsville Quad

BY: Craig Duckworth

DATE: 9/12/13

ELEV: 1130'

**CURRENT STATUS:**

10" csg @ 404'  
 8 1/4" csg @ 934'  
 4 1/2" csg @ 2225' (100 sks cement)

**TD @ 2858'****Fresh Water @** None Reported**1<sup>st</sup> Salt Sand @** Estimated @ 1351'**Gas shows @** Sand 1838' & Sand 2140'**Oil Shows @** Sand 2140**Stimulation:** Fractured 12/11/63**Salt Water @** None reported**Coal @** 376' - 379'

1. Notify State Inspector, **Bryan Harris 304-553-6087**, 24 hrs. Prior to commencing operations.
2. TIH w/ tbg @ 2225'; Set 440' C1A Cement Plug @ 2225' to 1785' ( gas show @ 1838' & water @ 1870')
3. TOO H w/ tbg, Free Point 4 1/2", cut 4 1/2" @ free point, TOO H w/ 4 1/2" csg
4. Set a 100' C1A Cement Plug 50' In/Out of cut. Perf all FW, Coal, Oil and Gas shows below 4 1/2" cut. Do not omit any plugs
5. TIH w/ tbg @ 1351'; Set 100' C1A Cement Plug @ 1351' to 1251' (Salt Sand @ 1351')
6. TOO H w/ tbg @ gel hole @ 1251' to 984'.
7. Set a 100' C1A Cement Plug 50' In/Out of cut. Perf all FW, Coal, Oil and Gas shows below 8 1/4" cut. Do not omit any plugs.
8. TOO H w/ tbg @ 984'; Set 100' C1A Cement Plug @ 984' to 884' (8 1/4" @ 934')
9. TOO H w/ tbg @ 884'; gel hole @ 884' to 454'.
6. TOO H w/ tbg @ 454'; Set 100' C1A Cement Plug @ 454' to 354' (10" csg st. @ 404')
7. Set a 100' C1A Cement Plug 50' In/Out of cut. Perf all FW, Coal, Oil and Gas shows below 10" Do not omit any plugs
8. TOO H w/ tbg @ 354'; gel hole @ 354' to 200'.
9. TIH w/ tbg @ 200'; Set 200' C1A Cement Plug @ 200' to Surface
10. Top off as needed
11. Set Monument to WV-DEP Specifications
12. Reclaim Location & Road to WV-DEP Specifications

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NOV 25 2013

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STATE OF WEST VIRGINIA  
DEPARTMENT OF MINES  
OIL AND GAS DIVISION

2101559P

Quadrangle Burns

WELL RECORD 6

Oil or Gas Well Gas

Permit No. 613-1559

Company M. J. Moran  
Address Box 368, Weston, W. Va.  
Farm Charles Jackson Acres 30 1/2  
Location (waters) Ellis Creek  
Well No. 1 Elev. 1130  
District Glenville County Gilmer  
The surface of tract is owned in fee by Alva P. Luther  
Address Linn, W. Va.  
Mineral rights are owned by Roscoe Jackson, et al  
Address Valley Chapel, W. Va.  
Drilling commenced 10-18-63  
Drilling completed 12-1-63  
Date Shot          From          To           
With         

Casing and Tubing	Used in Drilling	Left in Well	Packers
Size			
16			Kind of Packer
13			
10	10 1/2	10 1/2	Size of
8 1/2	9 3/4		
6 1/2			Depth set
5 1/2	2225	2225	
3			Perf. top
2			Perf. bottom
Liners Used			Perf. top
			Perf. bottom

Open Flow /10ths Water In          Inch  
/10ths Merc. in          Inch  
Volume          Cu. Ft.  
Rock Pressure          lbs.          hrs.  
Oil          bbls., 1st 24 hrs.  
WELL ACIDIZED         

CASING CEMENTED 1 1/2 SIZE 2225 No. Ft. 12-563 Date 12-1-63  
100 sacks cement  
COAL WAS ENCOUNTERED AT 376 FEET          INCHES  
379 FEET          INCHES          FEET          INCHES  
         FEET          INCHES          FEET          INCHES

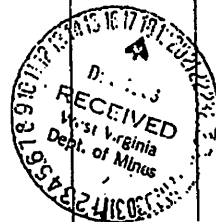
WELL FRACTURED 12-11-63

RESULT AFTER TREATMENT more than one million

ROCK PRESSURE AFTER TREATMENT 7500 - 24 hrs.

Fresh Water          Feet          Salt Water          Feet         

Formation	Color	Hard or Soft	Top	Bottom	Oil, Gas or Water	Depth	Remarks
Dirt			0	13			
Sand			13	55			
Red Rock			55	120			
Slate			120	155			
Red Rock			155	215			
Slate			215	275			
Lime			275	359			
Slate			359	376			
Coal			376	379			
Slate			379	422			
Sand			422	495			
Red Rock			495	520			
Slate & shells			520	562			
Lime			562	600			
Slate & shells			600	677			
Red Rock			677	687			
Slate & shells			687	756			
Red Rock			756	762			
Slate & shells			762	895			
Sand			895	956			
Broken Lime			956	1075			
Sand			1075	1085			
Slate & shells			1085	1310			
Sand			1310	1387			
Slate and shells			1387	1525			
Sand			1525	1675			
Slate and shells			1675	1693			
Sand			1693	1728			
Slate and shells			1728	1800			
Lime			1800	1835			
Sand			1835	1865	gas	1838	Burns 6' in 2"
Lime			1865	1902			
Slate			1902	1928			
Lime			1928	1956	water	1870	1 bbl. per hr.
Slate			1956	1972			
Big Lime			1972	2050			
Sand			2050	2155	gas (bubble) & show of oil.		2140
Slate & shells			2155				
Total Depth			2858				



613-1559

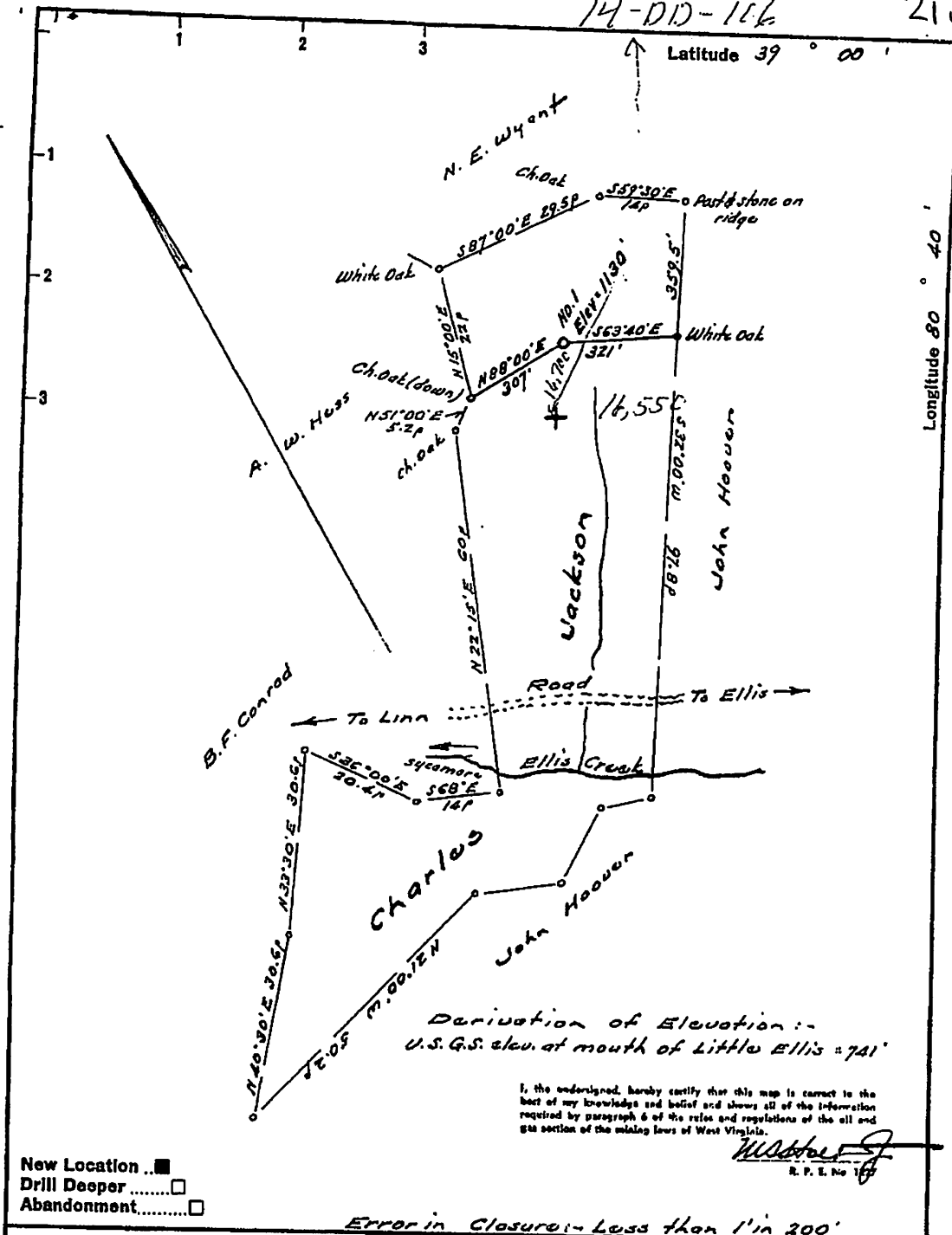
Date December 16, 1963

APPROVED M. J. MORAN Owner

By [Signature]

14-DID-116

2101559 P



Company M. J. MORAN  
Address Weston, West Va.  
Farm Charles Jackson  
Tract Acres 30.25 Lease No.             
Well (Farm) No. One Serial No.             
Elevation (Spirit Level) 1130  
Quadrangle Burnsville  
County Gilmer District Glenville  
Engineer *[Signature]*  
Engineer's Registration No. 1227  
File No.            Drawing No.             
Date Aug. 20, 1963 Scale 1" = 200'

STATE OF WEST VIRGINIA  
DEPARTMENT OF MINES  
OIL AND GAS DIVISION  
CHARLESTON

### WELL LOCATION MAP

FILE NO. Gil-1559

+ Denotes location of well on United States Topographic Maps, scale 1 to 62,500, latitude and longitude lines being represented by border lines as shown.

- Denotes one inch spaces on border line of original tracing.




2101559P

1) Date: November 22, 2013

2) Operator's Well Number  
**154941 (C. Jackson #1)**

3) API Well No.: 47 021 - 01559  
State County Permit


STATE OF WEST VIRGINIA - BUREAU OF ENVIRONMENT  
DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL & GAS  
NOTICE AND APPLICATION TO PLUG AND ABANDON WELL

4) Surface Owner(s)	to be served:	
(a) Name	Avin B. & Mary E. Lowther	
Address	3484 Ellis Road	
	Linn WV 26384	
(b) Name		
Address		
(c) Name		
Address		
6) Inspector	Bryan Harris	
Address	P.O. Box 157	
	Volga, WV 26238	
Telephone	304-553-6087	

5) (a) Coal Operator:

Name	None
Address	

(b) Coal Owner(s) with Declaration

Name	Avin B. & Mary E. Lowther	
	3484 Ellis Road	
Address	Linn WV 26384	

(c) Coal Lessee with Declaration

Name	None
Address	

TO THE PERSONS NAMED ABOVE:

You should have received this Form and the following documents:

- (1) The application to Plug and Abandon a Well on Form WW-4B, which sets out the parties involved in the work and describes the well its and the plugging work order; and
- (2) The plat (surveyor's map) showing the well location on Form WW-6.

The reason you received these documents is that you have rights regarding the application which are summarized in the instructions on the reverses side. However, you are not required to take any action at all.

Take notice that under Chapter 22-6 of the West Virginia Code, the undersigned well operator proposes to file or has filed this Notice and Application and accompanying documents for a permit to plug and abandon a well with the Chief of the Office of Oil and Gas, West Virginia Division of Environmental Protection, with respect to the well at the location described on the attached Application and depicted on the attached Form WW-6. Copies of this Notice, the Application, and the plat have been mailed by registered or certified mail or delivered by hand to the person(s) named above (or by publication in certain circumstances) on or before the day of mailing or delivery to the Chief.

Well Operator:  
By:  
Its:  
Address:  
  
Telephone:

EQT Production Company  
Victoria J. Roark  
Permitting Supervisor  
PO Box 280  
Bridgeport, WV 26330  
(304) 848-0076

Subscribed and sworn before me this

day of November, 2013  
Notary Public

My Commission Expires: 1/15/99

The Office of Oil & Gas processes your personal information, such as name, address and phone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use of your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@state.virginia.gov](mailto:depprivacyofficer@state.virginia.gov).



**STATE OF WEST VIRGINIA**  
**NOTARY PUBLIC**  
Kathy M Kugel  
PO Box 109  
Davis, WV 26260  
Commission Expires August 24, 2022

**T**  
Roark  
80  
t, WV 26330

neopost  
11/22/2013  
US POSTAGE \$05.05  
ZIP 26330  
041L10228892

Bryan Harris  
P.O. Box 157  
Volga, WV 26238

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Environmental Protection

2101559P



WW-9  
Revised 2/03

Page \_\_\_\_ of \_\_\_\_  
2) Operator's Well Number  
**154941 (C. Jackson #1)**  
3) API Well No.: 47 021 - 01559

**STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL & GAS  
CONSTRUCTION AND RECLAMATION PLAN AND SITE REGISTRATION APPLICATION FORM  
GENERAL PERMIT FOR OIL AND GAS PIT WASTE DISCHARGE**

Operator Name: EQT PRODUCTION COMPANY OP ID: \_\_\_\_\_  
Watershed: Jakes Run Quadrangle: Gilmer 7.5'  
Elevation: 1158' County: Gilmer District: Glenville  
Description of anticipated Pit Waste: Formation Fluids

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes\_\_\_ No X  
Will synthetic liner be used in the pit? Yes Is so, what ml.? 30 ml

Proposed Disposal Method for Treated Pit Wastes:

X Land Application  
\_\_\_\_ Underground Injection - UIC Permit Number \_\_\_\_\_  
\_\_\_\_ Reuse (at API Number) \_\_\_\_\_  
\_\_\_\_ Offsite Disposal Permit #. \_\_\_\_\_  
\_\_\_\_ Other: Explain \_\_\_\_\_

Drilling medium anticipated for this well? Air, freshwater, oil based, etc. \_\_\_\_\_  
If oil based, what type? Synthetic, petroleum, etc. \_\_\_\_\_  
Additives to be used? \_\_\_\_\_

Will closed loop system be used? \_\_\_\_\_  
Drill Cuttings disposal method? Leave in pit, landfill, remove offsite, etc. \_\_\_\_\_  
If left in pit and plan to solidify what medium will be used? Cement, Lime, sawdust \_\_\_\_\_  
Landfill or offsite name/permit number? \_\_\_\_\_

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Division of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any terms or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.  
I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

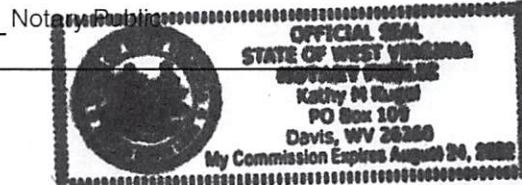
Company Official Signature *Victoria Roark*

Company Official (Typed or Printed) Victoria Roark

Company Official Title Permitting Supervisor-WV

Subscribed and sworn before me this 22 day of November, 2013

*Kathy M. Hugel*  
My Commission Expires 8-24-2022



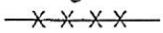
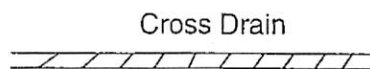





2101559P

OPERATOR'S WELL NO.:

154941 (C. Jackson #1)

## LEGEND

Property Boundary Diversion Road Spring Wet Spot Planned Fence Drain Pipe with size in inches Water Way Existing Fence Stream Cross Drain Open Ditch Artificial Filter Strip Rock North Building Water well Drill site Pit with Cut Walls Pit with Compacted Walls Area of Land Application of Pit Waste Proposed Revegetation Treatment: Acres Disturbed: 1± Prevegetation pH 5.8Lime 3 Tons/acre or to correct to pH 6.5Fertilizer (10-20-20) or equivalent 1/3 ton lbs/acre (500 lbs minimum)Mulch 2 Tons/acre or hydroseed.

## SEED MIXTURES

## Area I

Seed Type	lbs/acre
KY-31	40
Alsike Clover	5
Annual Rye	15

## Area II

Seed Type	lbs/acre
Orchard Grass	15
Alsike Clover	5

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## ATTACH:

Drawing(s) of road, location, pit and proposed area for land application.

Photocopies section of involved 7.5' topographic sheet.

Plan approved by: Bryan Harris

Comments: \_\_\_\_\_

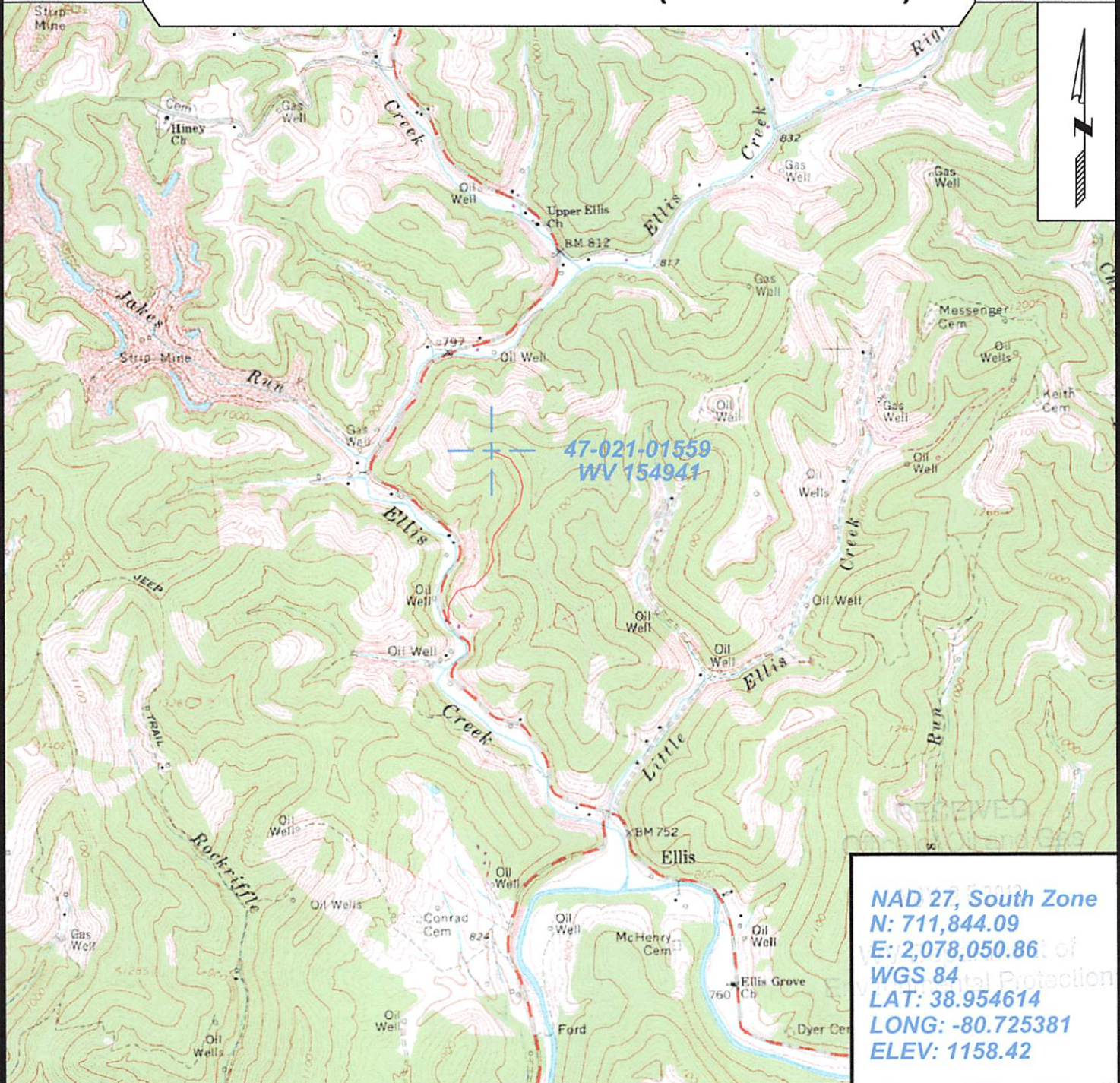
DEC 05 2013

WV Department of  
Environmental ProtectionTitle: Oil & Gas InspectorDate: 12-4-13Field Reviewed? X Yes        No



Topo Quad: Gilmer 7.5'Scale: 1" = 2000'County: GilmerDate: October 16, 2013District: GlenvilleProject No: 25-19-00-07**47-021-01559 WV 154941 (C. Jackson #1)**

Topo



SURVEYING AND MAPPING SERVICES PERFORMED BY:

**ALLEGHENY SURVEYS, INC.**

1-800-482-8606  
 P.O. BOX 438  
 BIRCH RIVER, WV 26610  
 PH: (304) 649-8606  
 FAX: (304) 649-8608

PREPARED FOR:

**EQT Production Company**

P.O. Box 280  
 Bridgeport, WV 26330



2101559P

WW-7  
8-30-06



West Virginia Department of Environmental Protection  
Office of Oil and Gas  
**WELL LOCATION FORM: GPS**

API: 47-021-01559 WELL NO.: WV 154941 (C. Jackson #1)

FARM NAME: Jackson

RESPONSIBLE PARTY NAME: EQT Production Company

COUNTY: Gilmer DISTRICT: Glenville

QUADRANGLE: Gilmer 7.5'

SURFACE OWNER: Avin B. and Mary E. Lowther

ROYALTY OWNER: Avis D. Linger, et al.

UTM GPS NORTHING: 4311776

UTM GPS EASTING: 523795 GPS ELEVATION: 353 m ( 1158 ft )

The Responsible Party named above has chosen to submit GPS coordinates in lieu of preparing a new well location plat for a plugging permit or assigned API number on the above well. The Office of Oil and Gas will not accept GPS coordinates that do not meet the following requirements:

1. Datum: NAD 1983, Zone: 17 North, Coordinate Units: meters, Altitude: height above mean sea level (MSL) – meters.

2. Accuracy to Datum – 3.05 meters

3. Data Collection Method:

Survey grade GPS       : Post Processed Differential       

Real-Time Differential       

Mapping Grade GPS X: Post Processed Differential X

Real-Time Differential       

4. **Letter size copy of the topography map showing the well location.**

I the undersigned, hereby certify this data is correct to the best of my knowledge and belief and shows all the information required by law and the regulations issued and prescribed by the Office of Oil and Gas.

Signature

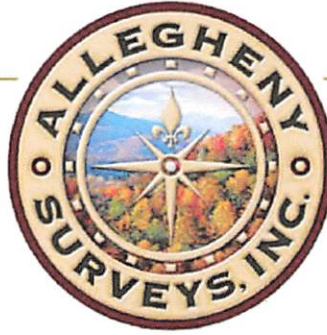
Title

Date

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West Virginia Department of Environmental Protection

PS # 2180

11/5/13



## POTENTIAL WATER SAMPLE DATA SHEET

CLIENT: EQT PRODUCTION COMPANY

LEASE NAME AND WELL No. C. Jackson #1 WV 154941 (47-021-01559)

### POTENTIAL SAMPLE LOCATIONS

There appears to be no known water samples within the required 1000' of the existing well WV 154941.

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Environmental Protection

#### BIRCH RIVER OFFICE

P.O. Box 438 • 237 Birch River Road  
Birch River, WV 26610  
phone: 304-649-8606  
fax: 304-649-8608

#### BRIDGEPORT OFFICE

172 Thompson Drive  
Bridgeport, WV 26330  
phone: 304-848-5035  
fax: 304-848-5037

#### CALDWELL OFFICE

212 Cumberland Street  
Caldwell, OH 43724  
phone: 740-305-5007  
fax: 740-305-5126

#### ALUM CREEK OFFICE

P.O. Box 108 • 1413 Childress Road  
Alum Creek, WV 25003  
phone: 304-756-2949  
fax: 304-756-2948



Topo Quad: Gilmer 7.5'Scale: 1" = 2000'County: GilmerDate: October 16, 2013District: GlenvilleProject No: 25-19-00-07

Water

**47-021-01559 WV 154941 (C. Jackson #1)**

No potential water wells within 1000'

47-021-01559  
WV 154941

NAD 27, South Zone  
 N: 711,844.09  
 E: 2,078,050.86  
 WGS 84  
 LAT: 38.954614  
 LONG: -80.725381  
 ELEV: 1158.42



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1-800-482-8606  
 P.O. BOX 438  
 BIRCH RIVER, WV 26610  
 PH: (304) 649-8606  
 FAX: (304) 649-8608

PREPARED FOR:

**EQT Production Company**

P.O. Box 280  
 Bridgeport, WV 26330